

## ABSTRACT

The present invention relates generally to the processing of multiple data streams with common resources. More particularly, this invention relates to a technique for time-multiplexed processing of, for example, multiple digital video programs. In one embodiment, an exemplary method provides for time-multiplexed processing of a set of digital streams includes storing each received packet in a random access memory. For each stream, the deadline for the arrival of the next packet at the receiver is determined and a priority based on the deadline is assigned. The stream with the highest assigned priority is identified as an identified stream. In some embodiments, the processing state of the identified stream is then restored. One or more packets of data corresponding to the identified stream are retrieved from random access memory to produce retrieved packets. The processing state is saved after the retrieved packets have been processed.